

## **Procedure of genetic recombination for Galinaceae hybrids breeding**

### **Claims**

1. Procedure of genetic recombination for Galinaceae hybrids breeding, based on the linked transmission of the genes determining the sex and the colour of feathers, characterized by the fact that after the selection of parents from pure, homozygous lines for feather colour transmission, a red Rhode Island male is crossed with a barred Marans female, then the F1 hybrid progeny is sexed according to the colour of feathers when day-old, and at the age of 18 weeks the hybrid F1 males and females are crossed producing generation F2, with four categories of phenotypes for the males and three categories of phenotypes for the females sexed by the colour of the feathers.

2. Procedure according to claim nr.1, characterized by the fact that by crossing a recessive (bb) homozygous red Rhode Island male with a dominant (BB) homozygous Marans female, the F1 progeny assessed genetically when day-old, consisted of 50% heterozygous (Bb) males with black juvenile feathers on the body and a white spot on the head and 50% heterozygous (bB) females with black juvenile feathers on the body and head.

3. Procedure according to claims nr. 1 and 2, characterized by the fact that the heterozygous (bB) F1 females, 50% have black feathers on the body and reddish-black on the neck and head, combination of colours different both from the red feathers of the homozygous (bb) male parent and from the feathers of the heterozygous (Bb) male hybrids from F1, due to the fact that in chromosome W of the respective heterozygous (bB) females, there is the dominant sex gene (SDW), with epistatic action, which enables day-old recombinants sexing by the colour of their juvenile feathers, while in relation with the recessive (sdw) allele located in a homologue region in chromosome Z, determines the formation of the heterozygous (SDWsdw) genotype of female sex and of the recessive homozygous genotype (sdwsdw) of male sex.

4. Procedure according to claim 1, characterized by the fact that by crossing a heterozygous (Bb) barred male with a heterozygous (bB) reddish-black female from generation F1, results a F2 generation consisting of 49.4% mixture of homozygous (BB) and heterozygous (Bb) males and females with black juvenile feathers on the body and a white spot on the head, 25.1% heterozygous (bB) males and females with black juvenile feathers on the body and head, 25.5% homozygous (bb)

females and males with red juvenile feathers on the body and head, assessed genetic when day-old.

5. Procedure according to claim 4, characterized by the fact that when F2 progeny was assessed genetically at the age of 18 weeks, 24.7% homozygous (BB) barred females and males with barred feathers, 24.7% heterozygous (Bb) barred females and males, 71.8% of the males having barred feathers and 28.2% having barred feathers on the body and red feathers on the neck and head, while 100% females were barred, 25.1% heterozygous (bB) reddish-black females and males with black feathers on the body and reddish-black feathers on the neck and head and 25.5% homozygous (bb) females and males with red feathers.